NEP Puget Sound Toxics and Nutrients

Melissa Gildersleeve
Water Quality Program
Watershed Management
Section Manager

GOAL

To improve human & environmental health in the Puget Sound Ecosystem by preventing, reducing, & controlling **Toxics** and **Nutrients** from entering the Sound

Outline of Presentation

- Background
- Highlights of toxics projects
  - Science
  - Implementation
- Highlights of nutrient projects
  - Science
  - Implementation
- Closing thoughts

Background

The focus of this presentation is on the first 4 years (first agreement)

* **total of 56 projects**

- **$15.7 million federal grant**
  ($16 million match)

- **$32 million investment in Puget Sound**

Background

Core Group developed the 6 Year Strategy

Strategy focused on:

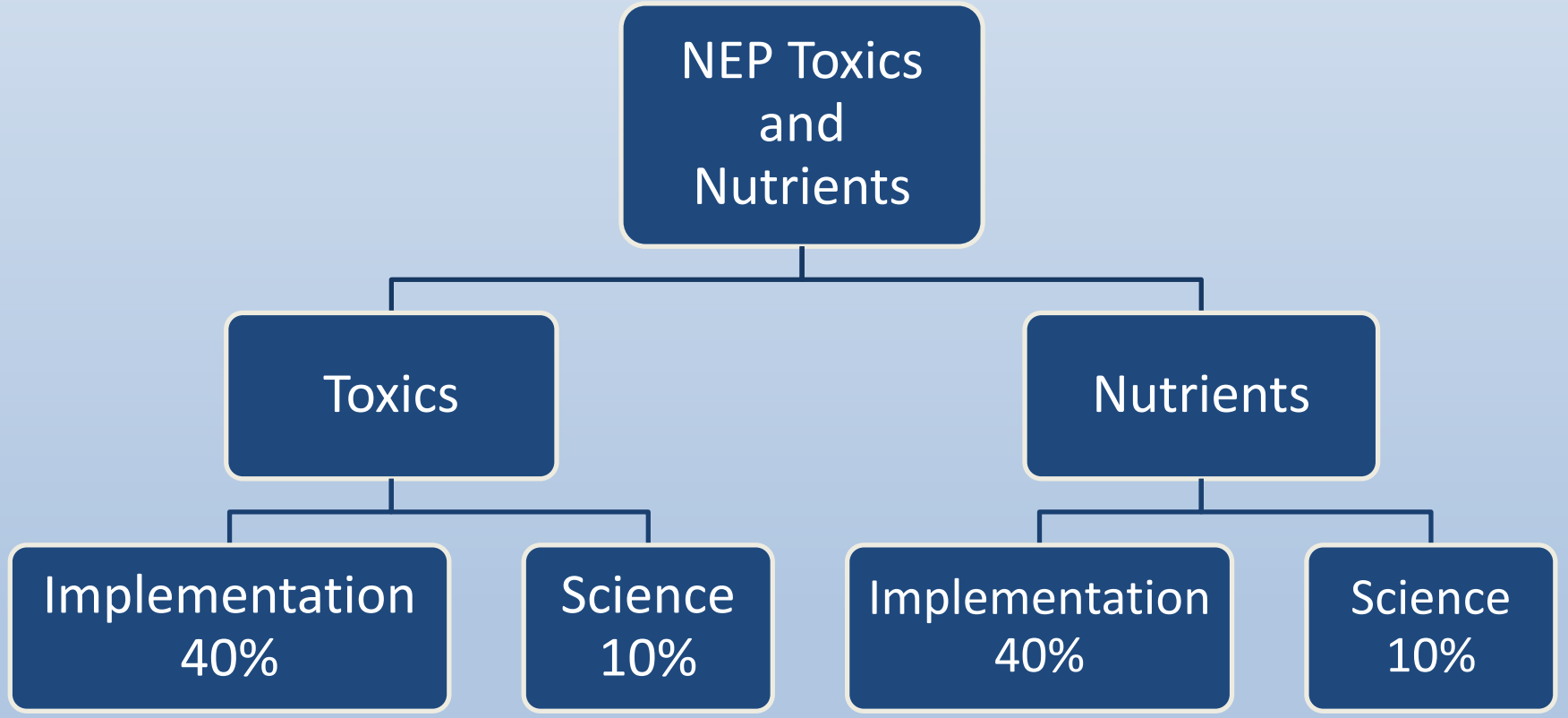
- Scientific investigations of toxics and nutrients
- Manage the pollutants
  - Limit or manage amount of pollutant released
  - Cleanup released pollution

Connection to the Action Agenda

Addressing 16+ Near Term Actions & Recommendations in the Science Plan

Toxic Science	Characterize emerging contaminants
Nutrients Science	Quantifying nutrient sources Understanding nutrient/dissolved oxygen dynamics
Toxics Implementation	Promote safer alternatives Implement and strengthen authorities… on toxics
Nutrients Implementation	Ensure compliance…eliminate pollution from working farms. Complete Total Maximum Daily Load (TMDL) studies…

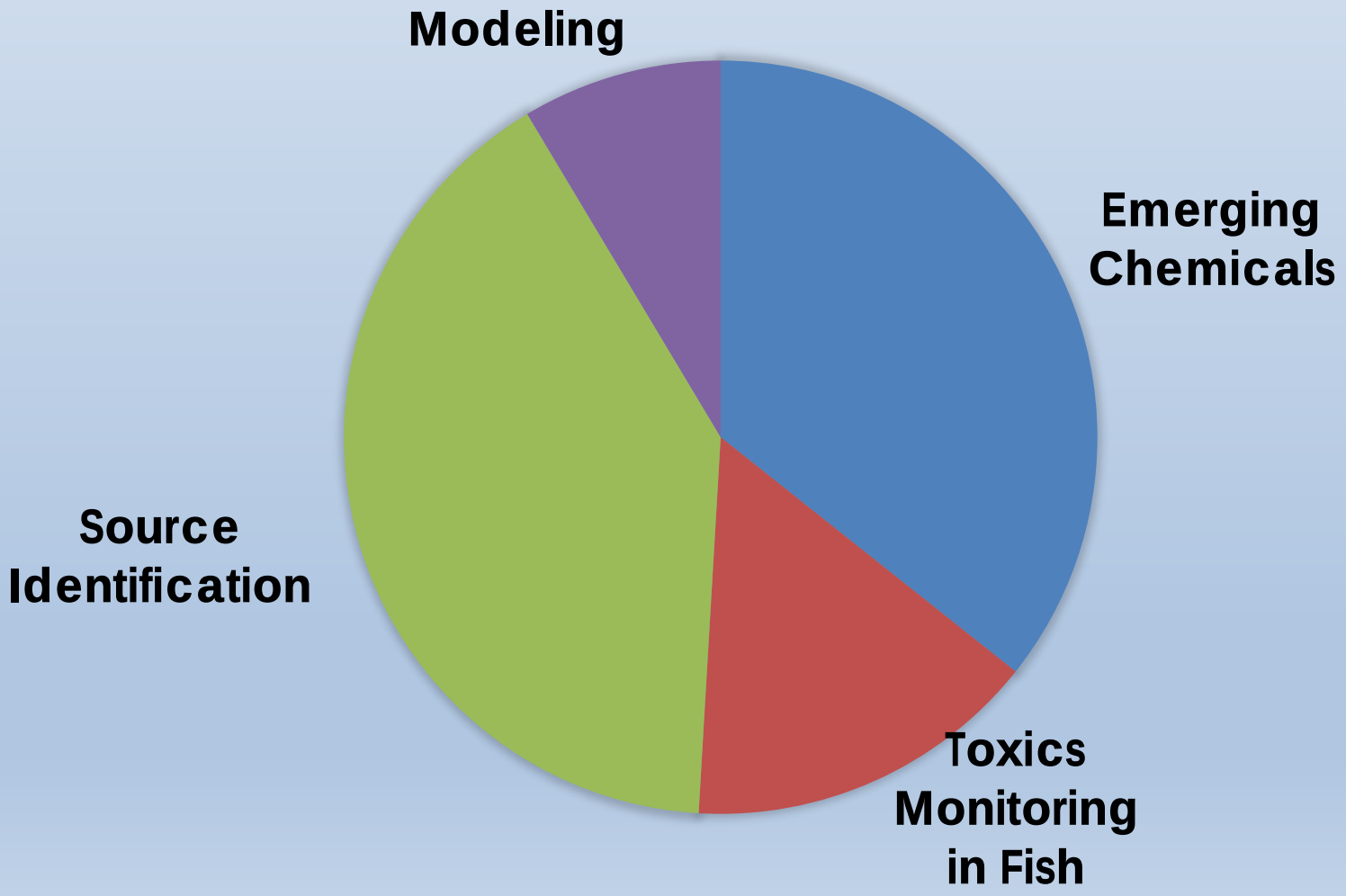
Allocation Scheme



2011 Assessment of Toxics in Puget Sound provided the foundation for toxics work within the NEP grant

TOXICS

Science - Toxics



Science – Toxics

Limelight on vexing policy issue

We now have data on toxics in fish. Absorbing contaminants as they migrate from freshwater spawning grounds through urbanized areas.

Habitat restoration efforts alone might not recover populations if other impairments are not addressed.

Actions are needed to address toxics in fish.

Science - Toxics

Roofing Assessment

Roofing may be a significant source of contaminants

(Zinc, copper, cadmium, arsenic, PAHs and phthalates)

Science - Toxics

Success!

Worked with the Construction Industry on Roofing Study

$50K donated to the project by the Asphalt Manufactures Roofing Association

Science - Toxics

Overall contaminant levels lower than literature values.

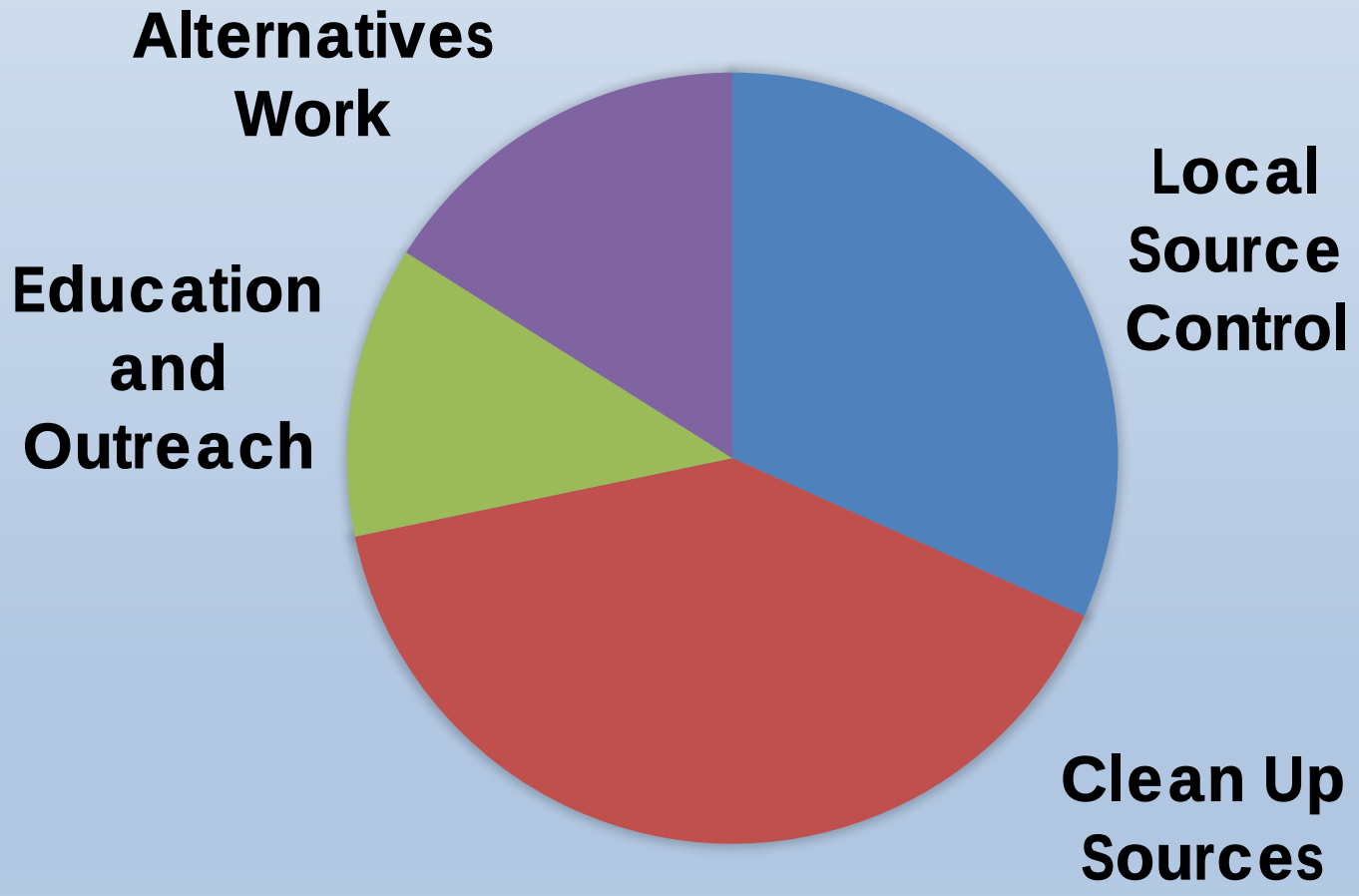
New asphalt shingles low concentrations of metals.

High concentrations of Cu in treated wood shakes and copper sheet roofing.

Arsenic was high in the treated wood shakes.




Implementation - Toxics



Implementation - Toxics

Local Source Control

Focus - small businesses

eliminate dangerous wastes, stormwater, solid waste, and spills pollution at the sources

Funded 6 jurisdictions

- 3,895 visits
- 2,850 issues identified
- 91% timely resolution of issues

Implementation - Toxics

Polycyclic aromatic hydrocarbons (PAHs)

Woodstove Replacement

- Over 800 woodstoves removed
- Preventing 600 lbs. of PAH

Piling Removal

- Removed more than 1,000 pilings
- Equating to 7,500 lbs. of PAH

Implementation - Toxics

Piling Removal

Before piling removal
Chambers Bay

After piling removal
Chambers Bay

225 pilings removed * 112 were creosoted

1000lbs of creosote removed!

Implementation - Toxics

Piling Removal Lessons Learned

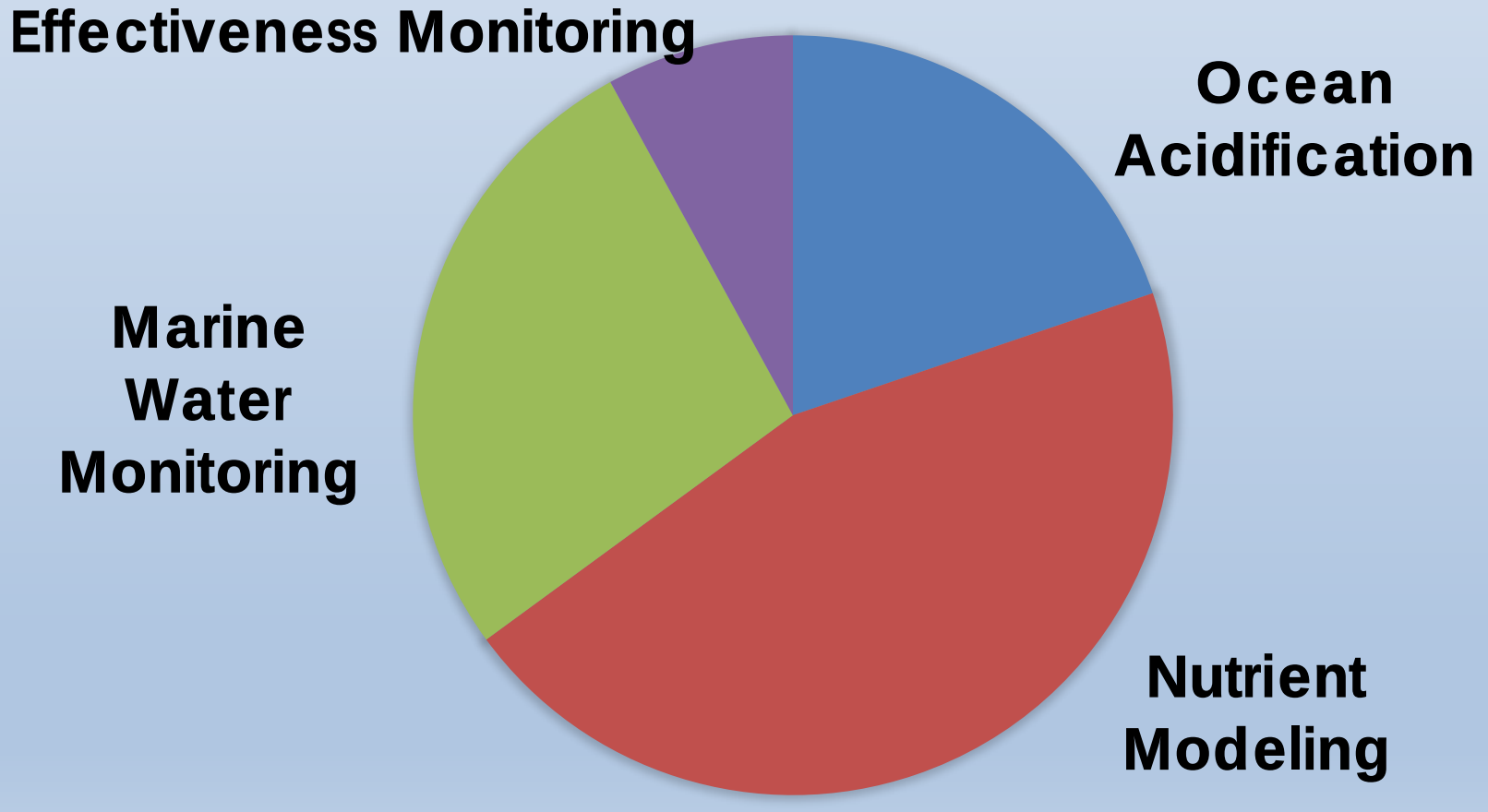
Effectiveness monitoring identify problems with cleanup procedures for pilings

Changed cleanup process

NEP investments helped finalize Salish Sea model. NEP investments also started addressing nutrient obvious sources.

Nutrients

Science - Nutrients

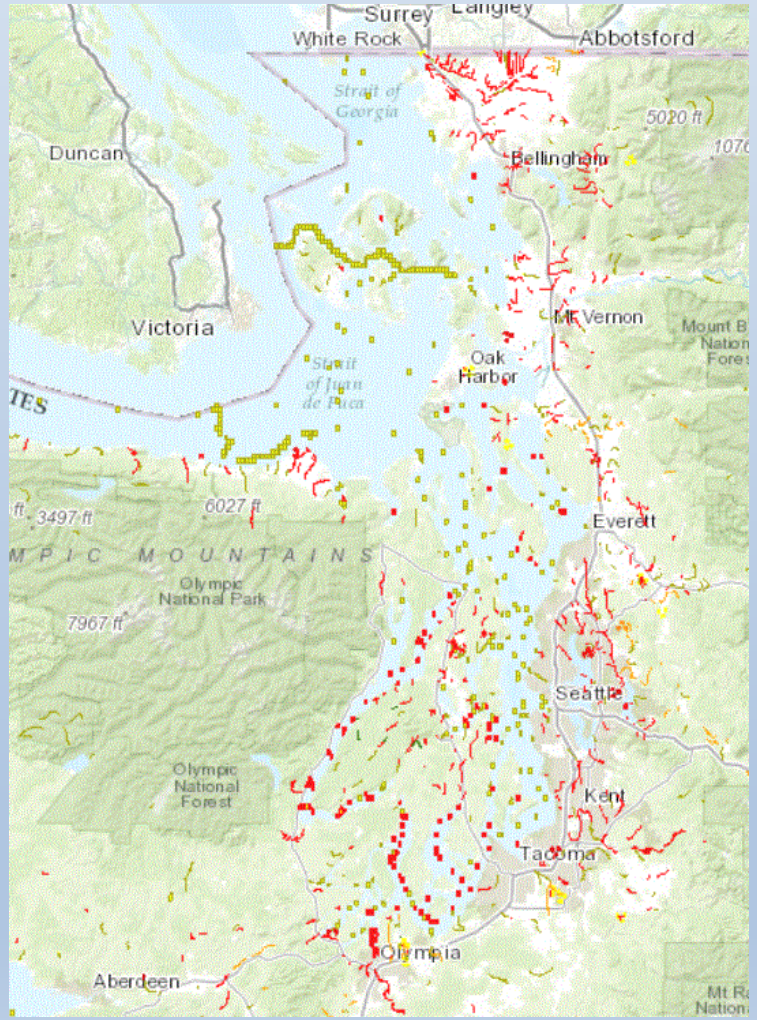


Science - Nutrients

Lessons Learned

Developing the science and models takes time

A 6 year window was critical to complete the Salish Sea model



Science - Nutrients

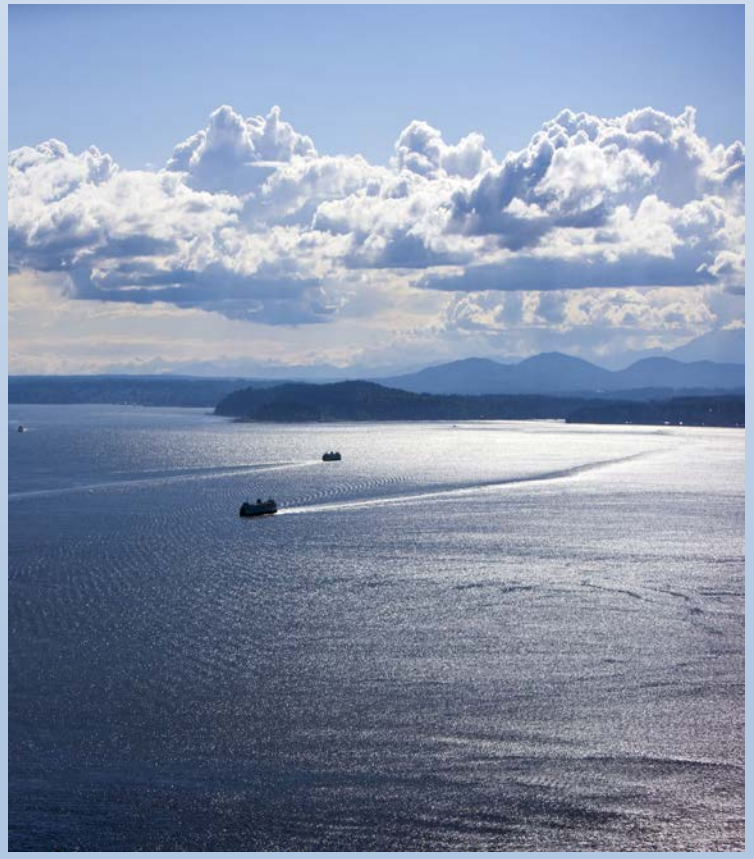
Salish Sea model will support the Puget Sound Nutrient Source Reduction Project

Photo Credit: Dustin Bilhimer

Science - Nutrients

Phase 1: 2017 – end

Share and communicate best available science so the public and stakeholders understand the problem



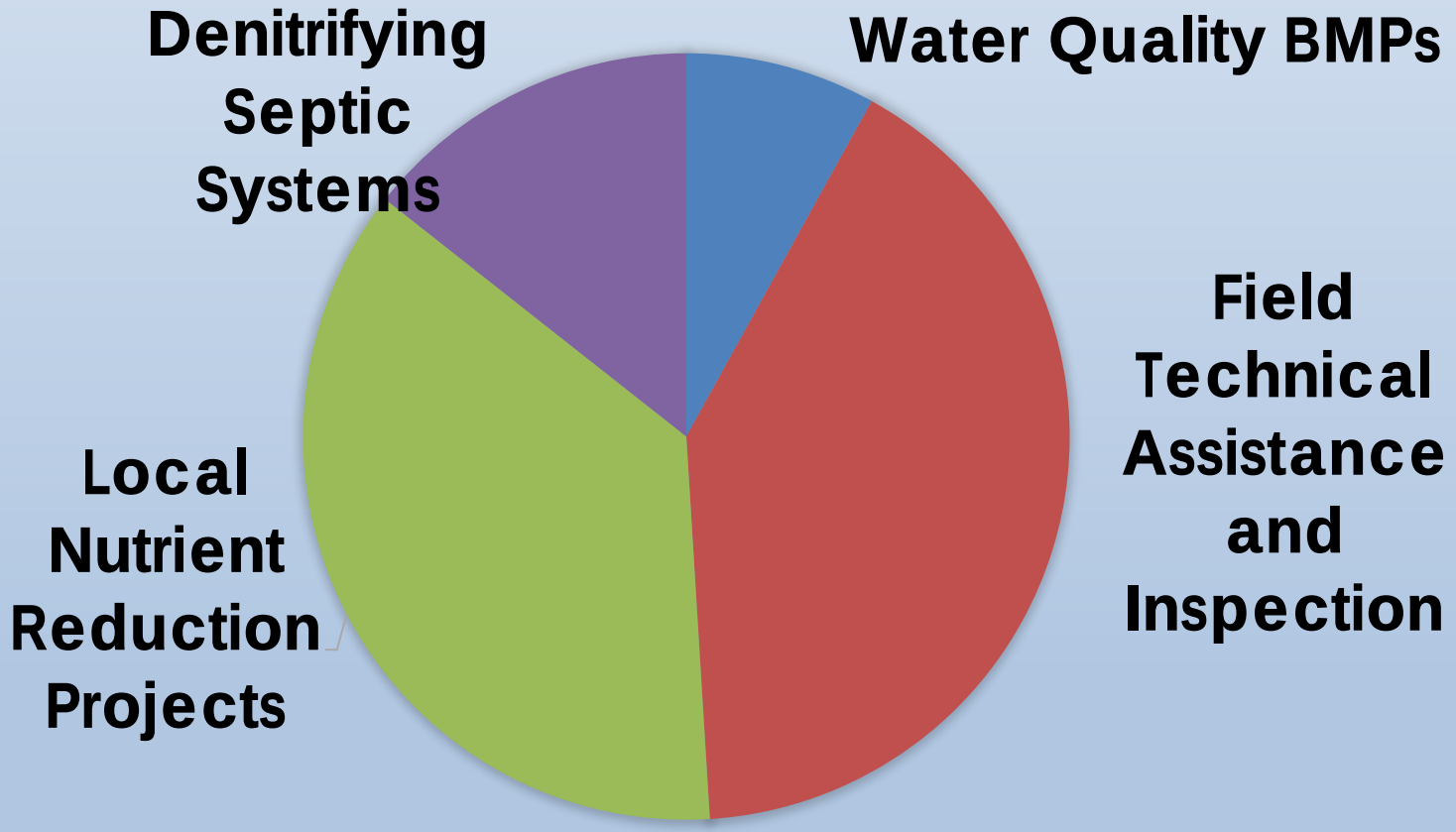
Phase 2: 2018 – 2021

Collaboratively develop a Nutrient Reduction plan for Puget Sound

Phase 3: 2022 – 2032+

Implement the nutrient reduction plan to improve water quality in Puget Sound

Implementation - Nutrients



Implementation - Nutrients

Whatcom Field Staff

124 properties were inspected one or more times

Sources:

- 381 pollution sources were identified
- 234 pollution sources were fixed on 106 properties

Implementation - Nutrients

Funding for Water Quality BMPs

- Coordinated with Pathogen NEP work
- Focus on small hobby farms
- 40 + projects/80+ BMPs

Challenges

- Long lag time between problems & BMP implementation

Closing Thoughts

- 6 year window helpful
- Need mix of science & implementation
- Partnerships between regulators & stakeholders lead to strong solutions
- Need central location to distribute data gathered through NEP projects
- Quality Assurance critical